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ABSTRACT

The third party evaluation report of the BHQ (Baldwin-Whitehall, Highland, and Quaker Valley) Career Education Project, a K-14 career education project in Allegheny County, Pennsylvania, is presented in the document. Included in the report are discussions of the background and history of the project, a description of the evaluation design, and the presentation of the tabulated data. Several problems were encountered in conducting the evaluation. Funding reductions caused restriction of evaluation activities resulting in an emphasis on student outcomes and little evaluation of process or management. Also, the evaluation guidelines and scope of work statement were released too late to allow for evaluation of the entire year's activities. (NJ)

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Evaluation of BHQ Career Education Project

Allegheny Intermediate Unit
Pittsburgh, Pennsylvania

Submitted to:
Mrs. Jane Robertson
Project Director

Submitted by:

Educational Research and Development Associates
West Chester, Pennsylvania

July, 1975

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I BACKGROUND AND HISTORY

The BHQ Career Education Project is coordinated by the Allegheny Intermediate Unit and is operational in Baldwin-Whitehall, Highlands, and Quaker Valley School Districts. These school districts differ in size, complexity, and clientele. The common characteristic is a firm commitment to career education.

ERANDA was selected as the third party evaluator after the start of the school year and produced an evaluation design in accordance with the Scope of Work Statement released by the Project Director and the evaluation guidelines formulated by Development Associates, Inc. for the U. S. Office of Education. The major problems encountered were:

(1) Severe reductions in project funding level with consequent restriction of evaluation activities. Emphasis has been placed on student outcomes or products. Very few resources are available to evaluate the educational process (treatment) or project management.

(2) Differences between the objectives previously identified by project personnel and those contained in the Scope of Work Statement (six) and the evaluation guidelines formulated by Development Associates, Inc. (thirty-three). Considerable effort was expended cross-referencing the various sets of objectives and determining the relative emphasis placed on them by the project.

(3) The evaluation guidelines and Scope of Work Statement were released too late to be incorporated in a September to

May design. This has forced projects into evaluating a segment of the year's activity.

(4) The instruments approved by USOE for measuring objectives were often of marginal validity.

II EVALUATION DESIGN

The project objectives and the measuring instruments employed were as follows:

Scope of Work #	USOE #	Objective	Grade Level	Instrument
1	I c	Students will display positive attitudes toward themselves	3,6	McDaniel Inferred Self Concept Scale
1	I d	Students will recognize that social, economic, educational and cultural forces influence their development	9,12	Career Development Inventory - C
2	IV a	Students will know the major duties and required abilities of different types of paid and unpaid work	3,6 9,12	Career Education Questionnaire - 3,6 Career Development Inventory - C 9,12
2	IV b	Students will know differences in conditions and life styles associated with different types of paid and unpaid work	3,6	Career Education Questionnaire
2	IV c	Students will know entry requirements for major types of paid and unpaid work	6,9, 12	Career Education Questionnaire - 6 Career Development Inventory - C 9,12
3	V c	Students will be able to identify, locate and utilize sources of information to solve career decision-making problems	9,12	Career Development Inventory - C
3	V e	Students will know the steps to be taken and the factors to be considered in career planning	9,12	Career Development Inventory - C
3	V f	Students will demonstrate active involvement in career decision-making	9,12	Career Development Inventory - A & B

Scope of Work #	USOE #	Objective	Grade Level	Instrument
4	VIII	Students who are leaving the formal education system will be successful in being placed in a paid occupation, in further education or in unpaid work that is consistent with their career decision	12+	Questionnaire to 1975 Graduates
5	NA	The extent to which the number and type of job preparation opportunities have been expanded for young people in grades 10 through 14	10-14	Questionnaire to Counselors and Co-op Directors
6	NA	The financial resources from Section 142 (c) of Part D of P. L. 90-576 that were expended at each of the grade level breakouts	K-14	Examination of Project's Financial Records

The evaluation questions are specific to each objective and with the exception of objectives 4-6 are stated in pre-post, non-control group terms.

The objectives were primarily concerned with student outcomes. The only evaluation activities directed toward Treatment (Process) or Management were observations, questionnaires, teacher logs, etc. to determine if educational activities previously mentioned were actually conducted and what type of client response they evoked. The evaluation design employed with objectives 1 through 3 was a pre-test, post-test non-control group design. Campbell and Stanley[1] refer to it as pre-experimental design #2. It provides marginal protection against the threats to internal and external validity. The major reasons for selecting this design were as follows:

(1) Career education activities exist in all schools to which the project has access. A non-contaminated control group could not be located within the districts.

(2) Lack of lead time prevented the staff from overcoming a natural reluctance to serve as a control group on the part of non-district classes.

(3) A reduced funding level required cuts in the program's educational activities. Even if a control group could be located (unlikely) it could be difficult to justify diverting the additional money required for testing from program activities to evaluation.

It would be desirable for USOE to fund a study to determine normal growth rates for various pre-post test intervals on the instruments approved by its panel. In this way any project's pre-post gains could be compared to a contrast group of similar socio-economic background children not involved in Career Education.

Objectives 4 and 5 were criterion referenced. The criterion for Objective 4 is that 60 percent of the responding students (1975 graduates) indicate that they have been successful in locating a paid occupation, further education or unpaid work consistent with their career decision. The criterion for Objective 5 is a 20 percent increase in the number and type of job preparation opportunities for students between the current year and the year preceding the project.

Objective 6 consists of allocating all expenses to the grade categories provided.

For Objectives 1, 2, and 3 a pre-test, post-test non-control group design was employed. The data was analyzed by grade level using the correlated "t" test at the .05 level (two-tailed).

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[1] Campbell, Donald T. and Stanley, Julian C., Experimental and Quasi-Experimental Designs for Research on Teaching.

Objectives 4 and 5 were criterion referenced and it was determined whether or not the criterion was met, not met, or exceeded. Stratified random sampling techniques were employed to select subjects for testing and interviews.

III DATA PRODUCED BY EVALUATION DESIGN

Pre tests were administered in January and post tests in May to determine if Objectives 1 to 3 had been achieved.

Table I

Performance of BHQ Project Third and Sixth Grade Students on the McDaniel Inferred Self-Concept Scale

Grade	N	Pre-Mean	Post-Mean	Gain	"t"	Probability
3	123	111.28	115.45	4.17	4.72	< .01
6	121	122.10	123.59	1.49	2.07	.05

Table I indicates statistically significant improvement in the self-concept of project children in grades 3 and 6. This is most commendable since a slight deterioration in self-concept is usually observed over the course of the school year. The data indicates that Objective Ic (USOE #) has been achieved.

The Career Development Inventory performance of project 9th grade students is depicted in Table II.

Table II

Performance of BHQ Project 9th Grade Students on the Career Development Inventory (N=115)

Scale	Pre-Mean	Post-Mean	Gain	"t"	Probability
Planning Orientation (A)	94.87	99.60	4.73	3.23	< .01
Resources for Exploration (B)	244.94	242.70	-2.24	-.52	N.S.
Information & Decision-Making (C)	16.35	16.08	-.27	-.63	N.S.
TOTAL	356.16	358.38	2.22	.44	N.S.

The 9th grade students made statistically significant improvement in Planning Orientation (Scale A) but failed to gain significantly on scales B and C. This indicates partial achievement of Objective Vf but failure to achieve Objectives Id, IVa, IVc, Vc, and Ve.

Table III shows a similar picture with the 12th grade participants failing to make significant gains on any of the scales of the Career Development Inventory.

Table III

Performance of BHQ Project 12th Grade Students on the Career Development Inventory (N=99)

Scale	Pre-Mean	Post-Mean	Gain	"t"	Probability
Planning Orientation (A)	112.40	113.09	.69	.40	N.S.
Resources for Exploration (B)	262.19	256.49	-5.70	-1.22	N.S.
Information and Decision Making (C)	18.53	17.88	-.65	-1.33	N.S.
TOTAL	392.17	387.46	-4.71	-.90	N.S.

The performance of the 3rd and 6th grade project students was considerably better than that of their older counterparts.

Table IV

Performance of BHQ Project Third and Sixth Grade Students on the Career Education Questionnaire

Grade	N	Pre-Mean	Post-Mean	Gain	"t"	Probability
3	106	18.28	20.72	2.44	7.77	.01
6	117	31.05	33.06	2.01	3.68	.01

Table IV shows that both grades made statistically significant progress on the Career Education Questionnaire.

This data indicates that Objectives IVa, IVb, and IVc have been achieved for this age level.

Objective VIII requires that 60% of the departing seniors indicate that they have been successful in locating a paid occupation, further education, or unpaid work that is consistent with their career decision.

Table V

Response of BHQ Project Seniors
to the Career Planning Questionnaire

1. Check which one of the following applies to you.

	N	%
A. I have been accepted by a college, trade school, institute, etc., for study after high school graduation.	41	44.09
B. I have located a job where I will be working after high school graduation.	14	15.05
C. I am still looking for a job where I can work after high school graduation.	27	29.03
D. I will enter the Armed Forces after high school graduation.	11	11.83

2. Do you think your decision to further your education or enter the job market will help you achieve your career plans? (be a lawyer, teacher, bricklayer, secretary, etc.)

	N	%
Yes	81	89.01
No	10	10.99

Table V indicates the project has been successful in achieving this objective. 89.01% of the students consider their employment or educational decision to be compatible with their career plans. This is considerably greater than the 60% required by Objective VIII. Less than 30% of the students were still looking for employment during May of their senior year. This is a very impressive result considering the state of the economy in the spring of 1975.

The last two objectives were included in the Scope of Work Statement but not in the USOE list of objectives. Objective #6 (Scope of Work) requires a 20% increase in the number and type of job preparation opportunities for students between the current year and the year preceding the project.

Table VI

Response of Counselors and Co-op Directors in BHQ Project Schools to Career Education Status Questionnaire

1. Did the students in your school have a greater opportunity to prepare for jobs in the 1974-75 school year than they did in 1972-73.

	N	%
Yes	14	100.0
No	0	0.0

2. To what extent has the number of students visiting and observing various occupations increased since the 1972-73 school year?

		N	%
A great deal	(greater than 40% increase)	3	20.0
Somewhat	(20-40% increase)	5	33.3
A little	(1-20% increase)	5	33.3
No increase	(0%--no increase)	2	13.3

3. To what extent has the number of students getting actual hands-on experience with the tools of a particular occupation increased since the 1972-73 school year?

		N	%
A great deal	(greater than 40%)	4	26.7
Somewhat	(20-40% increase)	2	13.3
A little	(1-20% increase)	8	53.3
No increase	(0%--no increase)	1	6.7

4. To what extent has the students' knowledge of the requirements, preparation, job conditions, etc., of various occupations increased since the 1972-73 school year?

		N	%
A great deal	(greater than 40%)	9	60.0
Somewhat	(20-40% increase)	4	26.7
A little	(1-20% increase)	2	13.3
No increase	(0%--no increase)	0	0.0

Table VI

(Continued)

5. Do you think the school staff is more aware of and committed to Career Education now than it was in the 1972-73 school year?

	N	%
Yes	13	92.9
No	1	7.1

Table VI shows that 100% of the responding counselors and co-op directors state that their students have a greater opportunity to prepare for jobs in the 74-75 school year than they did before the start of the project. 92.9% of them also state that their school staff is more aware of and committed to Career Education now than they were before the start of the project.

The modal responses to Questions 2, 3, and 4 show: (1) the number of students visiting and observing various occupations has increased between 1% and 40%; (2) the number of students getting actual hands-on experience has increased between 1% and 20%; and (3) more than a 40% increase has been observed in the students' knowledge of the requirements, preparation, job conditions, etc. of various occupations. Improvement of this magnitude is very commendable.

The final objective (Scope of Work #6) deals with financial disbursements and will be covered by the Project Director in subsequent reports.

The total array of product objectives and the extent of their achievement is depicted in Table VII. The symbol + indicates achieved, - indicates not achieved, and 0 shows partial achievement. N.A. indicates the objective was not applicable at a particular grade level.

Table VII

Achievement* of Product Objectives
by BHQ Project Students

Scope of Work #	USOE #	Objective	Grade Level 3	6	9	12
1	I c	Students will display positive attitudes toward themselves	+	+	NA	NA
1	I d	Students will recognize that social, economic, educational and cultural forces influence their development	NA	NA	-	-
2	IV a	Students will know the major duties and required abilities of different types of paid and unpaid work	+	+	-	-
2	IV b	Students will know differences in conditions and life styles associated with different types of paid and unpaid work	+	+	NA	NA
2	IV c	Students will know entry requirements for major types of paid and unpaid work	NA	+	-	-
3	V c	Students will be able to identify, locate and utilize sources of information to solve career decision-making problems	NA	NA	-	-
3	V e	Students will know the steps to be taken and the factors to be considered in career planning	NA	NA	-	-
3	V f	Students will demonstrate active involvement in career decision-making	NA	NA	0	-
4	VIII	Students who are leaving the formal education system will be successful in being placed in a paid occupation, in further education or in unpaid work that is consistent with their career decision	NA	NA	NA	+
5	NA	The extent to which the number and type of job preparation opportunities have been expanded for young people in grades 10-14	NA	NA	+	+

Table VII

(Continued)

6	NA	The financial resources from Section 142 (c) of Part D of P. L. 90-576 that were expended at each of the grade level breakouts					Project Director's Report
Percent of applicable objectives totally achieved			100%	100%	14.3%	25%	

* + = objective achieved
- = objective not achieved
0 = objective partially achieved
NA = objective not applicable

IV THE EDUCATIONAL PROCESS

The evaluation design employed complied with USOE guidelines and concentrated on student behaviors (the educational product).

The basic evaluation design has been expanded in order to increase its sensitivity to the educational process employed by the BHQ project.

The major project activities covered in this section are as follows.

A. Staff Development: The BHQ staff consists of a full time director and a half time coordinator in each of the three participating school districts. These personnel and selected consultants have conducted several in-service workshops and provided innumerable individual consultations with teachers. The feedback from the teachers served has been highly favorable. The Project Director has also assisted teachers in 43 other Intermediate Unit districts.

B. Curriculum Infusion: The project has been very much concerned with infusing career education concepts into the curricula of the participating districts. Table VI shows that 92.9% of the counselors and co-op directors in BHQ project schools consider the teaching staff to be more aware of and committed to career education now than before the start of the project. The project has developed a very extensive Career Education Curriculum Card File. This File is organized into five levels encompassing grades 3-12. The Curriculum File consists of over 850 cards contributed largely by teachers in the project schools. 500 copies of this File have been distributed throughout the project schools. Examination of this File indicates it is not a curriculum but a series of resource cards briefly listing objectives, resources, materials, activities, games and role playing, etc. Redundancies and omissions exist in the Card File which has not been developed into a coherent curriculum but does serve as a catalyst for career education activities.

Classroom visitations show that the third grade has been particularly effective in integrating career education into most subjects. Some teachers have had everyone of the children's parents discuss their vocation with the class. The results have been very good with some parents volunteering to return and work with classes other than those in which their child is enrolled.

Industry in the area of the project schools has been very cooperative. Local supermarkets, nature centers, library, post offices, etc. have hosted field trips and discussed the various occupations available.

Teachers are using educational T.V. Channel 13 where there are specific programs which can be used in career selection, values clarification, etc. Even the first grade students are interviewing their parents regarding careers and reporting back to the class.

The Baldwin-Whitehall School District held a Career Fair in April, 1975, which involved resource persons from 34 vocations ranging from Accountant to Veterinarian. The two-hour session covered the concepts of (1) Nature of the Work; (2) Places of Employment; (3) Training Requirements; (4) Employment Outlook; (5) Earnings and Working Conditions; and (6) Sources of Information. Persons attending the Career Fair considered it to have been very beneficial.

In order to assist students secure employment or training opportunities, the Quaker Valley High School component invited industrial personnel in to interview their students. The interviews were video-taped and reviewed with the students to help develop appropriate interview skills.

The evaluators interviewed over 25 teachers in three visits and they all indicated that the increased quantity and quality of career education activities have been largely inspired by the BHQ project.

C. Resource Centers: At the start of the BHQ project there was a general shortage of career education information. The small amount of information available was scattered between classrooms, counselors' offices, and libraries.

The project has been successful in establishing career information centers at all levels in each of the participating school districts.

The frequency of student use seems to be a function of location within the building and the attitude of the professional staff. The utilization rates range from 600 students per month at an Intermediate High School to 20 a month at a Senior High School.

A questionnaire was administered to a random sample of 100 students (grades 9-12) who have used the Career Information Center (CIC).

Table VIII indicates the responses of those students. The number of students responding varies from item to item since those students checking more than one alternative were eliminated from the analysis of that item.

Table VIII

Response of BHQ Project Students (Grades 9 and 12) on the Career Information Center Questionnaire

1. How many times have you used the Career Information Center?

	N	%
More than 10 times	9	9.8
7 to 10 times	5	5.4
4 to 6 times	15	16.3
Three times	24	26.1
Twice	14	15.2
Once	22	23.9
Never	3	3.3

2. What was your major reason for using the Center:

	N	%
It was a class assignment.	35	61.4
To learn more about jobs.	19	33.3
To learn more about colleges.	0	0.0
To learn more about training other than college. (trade schools, apprenticeships, etc.)	2	3.5
To learn more about myself.	0	0.0
Other.	1	1.7

Table VIII (Continued)

3. How do you rate the Career Information Center in terms of helping you learn more about jobs, schooling, yourself, etc.?

	N	%
Very Good	31	34.1
Good	37	40.7
Fair	19	20.9
Poor	2	2.2
Very Poor	2	2.2

4. Was there enough material and equipment in the Career Information Center?

	N	%
Yes	63	69.2
No	28	30.8

5. Could you find the answers to your questions?

	N	%
Yes	73	82.9
No	15	17.1

6. Was there someone to help you locate information in the Center Information Center?

	N	%
Yes	86	94.5
No	5	5.5

7. Do you think that most of the students in your school know there is a Career Information Center in the building?

	N	%
Yes	69	73.4
No	25	26.6

Table VIII shows that the modal student used the Career Information Center three times. 9.0% of the students used the CIC more than ten times. This represents a very high degree of utilization.

Item #2 indicates that over 60% of the students used the CIC because of a class assignment. This shows considerable teacher commitment to career education. None of the students visited the

CIC to learn more about colleges. 74.8% of the students rate the CIC's as good or very good in terms of helping them learn more about jobs, schooling, themselves, etc. Less than 5% rated the CIC's as poor or very poor. The overwhelming majority of users consider the CIC's to be:

(1) Adequately stocked and equipped (69.2%)
(2) Able to provide answers sought (82.9%)
(3) Adequately staffed (94.5%)

The only student response which raises concern is the 26.6% who think that most of the students are unaware that a CIC is in the building. The CIC's at the elementary level are central depositories where teachers check out materials. The system seems to work well with materials circulating between schools and residing in the classroom more often than the CIC.

D. Community Involvement and Dissemination: The project has placed considerable emphasis on the involvement of the community in BHQ activities. Parents and community members have served as resource persons, hosted field trips, conducted video-taped interviews, and served on the Career Education Planning Committee.

Parents have been advised of project activities through school district papers, newsletters, and the Career Fair.

V CONCLUSIONS AND RECOMMENDATIONS

The major conclusions substantiated by test data and evaluator observations are:

(1) The project achieved all of its product objectives at grade levels 3 and 6.

(2) 14.3% of the product objectives were achieved at the 9th grade level and 25% at the 12th grade level.

(3) The project was successful in motivating, supporting, and training large numbers of teachers in the three school districts.

(4) The project has convinced many teachers to utilize career education concepts in their teaching regardless of subject area. (science, social studies, etc.)

(5) Resource Centers have been established in all participating districts. Large numbers of students use these centers and rate them highly.

(6) The parents and community have been involved in BHQ project activities.

(7) The BHQ project is primarily engaged in supporting and motivating the individual teacher. No project-wide curriculum exists.

(8) Participating teachers are all volunteers who may accept all, some, or none of the project's services.

(9) The short interval between pre and post tests (4 months) and their dubious content validity reduced the probability of significant gains. This was especially true at the 9th and 12th grade levels. The fact that significant test gains were observed at the 3rd and 6th grade levels is very commendable.

(10) The coordinators within each of the three participating districts were part time personnel who are hard pressed to give the teachers the required support. In view of time limitations they did well.

The following recommendations seem appropriate:

(1) Either expand staff to support the 9th to 12th grade component or concentrate exclusively on the elementary level where a high degree of success has been achieved.

(2) Select one model or target school within each district where intensive career education activities (curriculum) can be tried out and demonstrated. Concentrate project resources in these schools so as to achieve the critical mass needed for success.

(3) Make sure all Career Information Centers are in attractive and convenient parts of the building. All students must know of their existence.

(4) Explore with the I.U. the feasibility of awarding in-service credits for teacher workshops, etc.